



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,688	03/23/2004	Dana Wilhelm	IR-2461 (2-3968)	2441

7590 01/12/2005
OSTROLENK, FABER, GERB & SOFFEN
1180 Avenue of the Americas
New York, NY 10036-8403

EXAMINER

VO, TUYET THI

ART UNIT PAPER NUMBER

2821

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,688

Applicant(s)

WILHELM, DANA

Examiner

Tuyet Vo

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 11 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 2-10, 12-16 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 11 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Agiman (US Pat. 5,757,173).

Agiman discloses a control circuit (60, Fig. 6a) as well as method for controlling soft-switching based on a voltage detecting at a midpoint (622) of a half-bridge circuit (Q1, Q2), comprising:

A high voltage device (63, 64) coupled to the midpoint (622) of the switching half bridge (Q1, Q2) for detecting voltage; and an output circuit (601, 602) coupled to the high voltage device (63, 64) for receiving the detecting voltage and outputting a signal to contribute to operation of the half-bridge circuit to soft switching the switches (Q1, Q2) based on the voltage at the midpoint of the half-bridge circuit, wherein the output signal of a detection voltage level detector, comparator (606), being supplied based on detection voltage at the midpoint (622) and a predetermined value (Vref1) in order to indicate the sufficient value obtaining at the midpoint

Art Unit: 2821

of the half-bridge so as to avoid hard-switching when a low side switch of the half-bridge is turned on (col. 2, lines 50-63) or avoid a fault condition (col. 4, lines 10-33).

Allowable Subject Matter

3. Claims 2-10, 12-16 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: the prior fails to establish a high voltage device is a MOSFET or is referenced to a switching half-bridge low voltage return reference as required in claims 2, 3 and 15. The prior art also lacks to comprise a control signal coupled to the high voltage device for selectively operating high voltage device to register the detection voltage as required in claims 4 and 20, or comprising a comparator having input coupled to the high voltage device, whereby an output of the comparator indicates a reach of a predetermined value to avoid hard-switching as required in claim 6. The claim invention further comprises a limiting a current through the high voltage device to register the detection voltage as required in claim 16 or actuating the high voltage device to register the detection voltage when a high-side switch in the switching half-bridge is turned off as required in claim 12, the claim 13 also requires buffering the high voltage device from the voltage at the midpoint. The claim 14 establishes a limit that prevent a voltage applied to the high voltage device from attaining a level lower than a common reference to which the high voltage device is coupled.

Citation of pertinent prior art

5. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Dagan et al. (US Pat. 6,614,288) discloses adaptive drive circuit for zero-voltage and low-voltage switching.

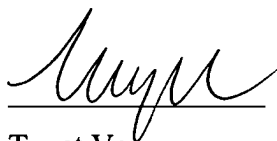
Art Unit: 2821

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyet Vo whose telephone number is 571 272 1830. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571 272 1834. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

A handwritten signature in cursive script, appearing to read 'Tuyet Vo', is written over a horizontal line.

Tuyet Vo

Primary Examiner

January 08, 2005